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Personnel

**PROCEDURES FOR PARACHUTE FAMILIARIZATION TRAINING (PFT)**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 36-22, *Military Training*. It establishes procedures and responsibilities for safe and realistic parachute familiarization training (PFT) for AETC flying personnel and others who participate in the US Air Force flying programs. PFT is designed to help students develop confidence in their ability to survive a parachute descent, control the parachute, and correctly execute a parachute-landing fall (PLF). This instruction applies to all undergraduate flying training wings and the 82d Training Wing, Sheppard AFB TX. It does not apply to Air National Guard and Air Force Reserve Command units. Maintain and dispose of records created as a result of prescribed processes in accordance with AFMAN 37-139, *Records Disposition Schedule*. See Attachment 1 for Glossary of References and Supporting Information. **NOTE:** The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**★SUMMARY OF REVISIONS**

This revision incorporates interim change (IC) 2003-1, which further defines excusals from parasail and parasail ground training (paragraphs 6.1 and 6.2); allows the use of the lateral drift trainer in lieu of the swing landing trainer, when available (paragraph 7.1); redefines wind limits (paragraph 11.1); clarifies the intent to have the student complete two parasail releases or document the reason for not completing a second release (paragraph 12.4); defines alternate summer uniform for parasail operations (paragraph 16); and expands the definition of acceptable tow ropes (paragraph 18.1). A ★ indicates revision from the previous edition. See the last attachment of this publication (IC 2003-1) for the complete IC.

**Section A--Overview of the PFT Program**

1.	Objective .....	3
2.	Description of the Parasail .....	3
3.	Safe-Operating Features of the Parasail.....	3
4.	Conducting Training .....	3
5.	Medical Clearance .....	4
6.	Excusals .....	4
7.	Proficiency in Parachute-Landing Falls (PLF) and Drag Training.....	4

8.	Responsibilities .....	4
<b>Section B--Requirements</b>		
9.	Crew Qualification .....	5
10.	Training Area .....	5
11.	Winds .....	5
12.	Student Training Requirements .....	5
13.	Student Equipment .....	6
14.	Parasail Communication Requirements .....	6
15.	Equipment .....	6
16.	Personal Equipment for PFT Instructors .....	6
<b>Section C--Equipment Modification and Application</b>		
17.	Tow Vehicle (Land) .....	6
Figure 1.	Tow and Reel Assembly .....	7
Figure 2.	Helicopter Cargo Hook .....	8
18.	Towrope .....	8
19.	Towrope Splicing .....	8
Figure 3.	Towrope Loop (Eye) Construction .....	9
Figure 4.	Towrope Splice Joints .....	10
20.	Tow Yoke .....	10
21.	Harness .....	10
Figure 5.	Tow Yoke .....	10
22.	Canopy .....	10
<b>Section D--Equipment Inspection, Maintenance, and Repair</b>		
23.	Preuse Inspection .....	11
24.	Daily Inspection .....	11
25.	Periodic Inspections .....	11
26.	Repairs .....	11
<b>Section E--Training Procedures</b>		
27.	Method of Training .....	11
28.	Descent and Landing Techniques (DLT) .....	11
29.	Parasail Training .....	12
<b>Section F--Crew Positions and Duties</b>		
30.	PFT Team .....	13
31.	OIC or NCOIC .....	13
32.	Release Operator .....	13
33.	Truck Driver .....	13
34.	Chase Vehicle Driver (Optional) .....	14
35.	Crew Chief and Canopy Assistants .....	14
36.	Landing Zone Supervisor (LZS) .....	15
37.	Landing Zone Assistant .....	15
38.	Recorder .....	15
<b>Section G--Use of Forms (Records and Reports)</b>		
39.	General Instructions .....	15
40.	Use of AETC Form 578, <b>Parachute Familiarization Training Equipment Record</b> ...	15
Figure 6.	Sample AETC Form 578, <b>Parachute Familiarization Training Equipment Record</b> ...	16
41.	Use of AETC Form 601, <b>Parachute Familiarization Training Injury Report</b> (RCS: AETC-SGT(AR)9001) .....	16
Figure 7.	Sample AETC Form 601, <b>Parachute Familiarization Training Injury Report</b> .....	17

42.	Use of AETC Form 717, <b>Parachute Familiarization Training Instructors Record</b> ....	19
Figure 8.	Sample AETC Form 717, <b>Parachute Familiarization Training Instructors Record</b> ...	19
43.	Use of AETC Form 768, <b>Parachute Familiarization Training Record</b> .....	19
Figure 9.	Sample AETC Form 768, <b>Parachute Familiarization Training Record</b> .....	20
44.	Use of AF Form 699, <b>Physiological Training Record</b> , and AF Form 702, <b>Individual Physiological Training Record</b> .....	21
45.	Use of AETC Form 435, <b>Mishap Data Worksheet</b> .....	21
46.	Forms Prescribed .....	21
47.	Forms Adopted.....	21
<b>Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION</b>		<b>22</b>
<b>Attachment 2—MINIMUM REQUIRED EQUIPMENT AND OPTIONAL EQUIPMENT</b>		<b>23</b>
<b>★Attachment 3—IC 2003-1</b>		<b>24</b>

### *Section A--Introduction*

**1. Objective.** The objective of parachute familiarization training (PFT) is to help students improve the timeliness of their ejection or bailout from a disabled aircraft by developing confidence in their ability to survive a parachute descent, control the parachute during descent, and correctly accomplish parachute landing fall (PLF) and post-PLF requirements.

#### **2. Description of Parasail:**

2.1. The major training device used in the PFT program is a specially designed parachute called a parasail. The parasail is an ascending or gliding parachute designed to incorporate airfoil lifting capabilities. Forward speed is obtained by a series of ports or slots that exhaust air aft. The parasail is constructed of nylon with extremely low porosity that permits a high percentage of the escaping air to be diverted out of the parasail, providing this forward thrust.

2.2. The parasail is towed aloft with a half-ton pickup truck modified with a special tow assembly in the truck bed.

2.3. Using the parasail, students may be towed to an altitude of approximately 400 feet, then released for a free parachute descent under carefully controlled conditions. Trainees can perform turns, execute PLFs, and perform antidrag procedures.

#### **3. Safe-Operating Features of the Parasail:**

3.1. The rate of descent can be adjusted from 0 to approximately 16 feet per second by not releasing the towrope and gradually decelerating the tow vehicle.

3.2. The free rate of descent for a 200-pound student is approximately 16 feet per second with the parasail compared to 18 feet per second with a personnel parachute.

3.3. The parasail has no oscillation in steady-state descent.

3.4. By controlling the release point for free descent, the landing zone supervisor can direct the student to a safe landing area.

**4. Conducting Training.** Using PFT team members and equipment and applying policies and training procedures prescribed by this instruction, the chief of the aerospace physiology training flight will conduct PFT for:

4.1. Undergraduate flying training students, including:

4.1.1. Air Force officers in joint specialized undergraduate pilot training (JSUPT).

4.1.2. Air Force officers in joint specialized undergraduate navigator training (JSUNT), whose major weapon system will be an ejection seat equipped Air Force aircraft.

4.2. Aircrew members (including flight surgeons) who routinely fly in ejection seat or parachute-equipped aircraft with the approval of their operations group commander. These students must complete egress academics, parachute academics, and descent and landing techniques (DLT) training requirements outlined in AETC Instructor Guide, P-V4A-A-JL-IG.

**NOTE:** PFT demonstrations are not authorized for local fairs, air shows, Armed Forces Day activities, etc.

**5. Medical Clearance.** A flight surgeon will determine which students will be allowed training and which will be medically excused. Before training, ensure a flight surgeon has provided written medical clearance for all students, as appropriate. Aerospace medicine will ensure medical coverage is provided during parasail operations.

## **6. Excusals:**

★6.1. The chief of the aerospace physiology training flight may excuse a student from parasail if the student has a language problem or other factors that could jeopardize his or her safety. The student must, however, complete the training listed in paragraph 7.

★6.2. Graduates of US military parachute courses (or another country from which the Air Force accepts physiological training) and students who previously completed parasail in another undergraduate flying training program may be excused from parasail but must complete the training listed in paragraph 7.

6.3. Record the reason for excusal, excusal authority, and date on the student's AF Form 699, **Physiological Training Record**. Additionally, students excused by the flight surgeon or chief of the aerospace physiology unit will have AF Form 4293, **Student Activity Record**, annotated with reason for excusal, excusal authority, and date. Place the completed AF Form 4293 in the student's folder.

6.4. Document all excusals on the physiological training monthly report, as required by AFI 11-403/AETC Sup 1, *Aerospace Physiological Training Program*, in the following format:

PFT Excusals: 1 Medical  
0 OIC/NCOIC  
6 Parachute Badge Qualified  
2 Previous PFT

**7. Proficiency in Parachute Landing Falls (PLF) and Drag Training.** Military parachutists and students who previously completed PFT must demonstrate proficiency in the following parachute procedures:

★7.1. PLFs from the 2- and 4-foot platforms, swing landing trainer (or lateral drift trainer), and suspended harness.

7.2. Release of parachute on the ground (drag training). Two drags must be accomplished, one on the back and one on the front.

## **8. Responsibilities:**

8.1. The AETC Surgeon General will provide the technical, fiscal, and administrative supervision required to conduct the PFT program.

8.2. The commander of each medical treatment facility will provide medical oversight and coordinate with wing and operations group commanders to ensure compliance with this instruction.

8.3. The chief of the aerospace physiology training flight will provide PFT and ensure instructors are properly trained for each crew position.

8.4. The Superintendent/NCOIC, Aerospace Physiology, will manage the flight's local parasail training program for landing zone supervisor (LZS). He or she will ensure the flight's local operating instructions outline a well-defined and -documented training program to certify and qualify flight personnel in LZS.

### ***Section B--Requirements***

**9. Crew Qualifications.** Status types are as follows:

**9.1. Apprentice Status.** Personnel are required to perform crew duties during crew proficiency training or training demonstrations (no student training) for a minimum of 25 launches per position before being certified to fill that position during student training.

**9.2. Certified Status:**

9.2.1. Personnel who have completed apprentice requirements in a specific position must be certified proficient for monitored student training by the chief of the aerospace physiology training flight.

9.2.2. A qualified instructor will monitor certified personnel during student PFT sessions for at least 100 student launches.

9.2.3. In addition, to be certified as LZS, personnel must be qualified to conduct 2- and 4-foot parachute landing fall platform, swing landing trainer, and drag training instructor positions, and complete 10 parasail releases as a jumper.

9.2.4. Truck drivers will attain certified status according to paragraph 33.

9.2.5. Annotate the instructor's AETC Form 717, **Parachute Familiarization Training Instructor's Record**, with "Cert" or "C" and the number of launches in the appropriate column and box.

**9.3. Qualified Status.** Personnel who have completed certified requirements in a specific position must be qualified proficient for unmonitored student training by the chief of the aerospace physiology training flight. Truck drivers will attain qualified status according to paragraph 33. Annotate the AETC Form 717 with "Qual" or "Q" in the appropriate column and box, and use this designation thereafter.

**9.4. Requalify Status.** Qualified PFT personnel must requalify if 24 months pass without any student or instructor parasail training experience. Complete requalification by performing that position during 25 launches in either crew proficiency training or training demonstrations (no student training) in any crew position. Truck drivers will requalify according to paragraph 33. Annotate the requalification on the AETC Form 717 by using "RQ" (requalified).

**10. Training Area.** The parasail training area must have a straight run distance of at least 2,500 feet. Because wind direction varies, a circle with a minimum diameter of 2,500 feet is required. The area must be free of obstructions that would impede the progress of the tow vehicle, foul the towrope, or injure the student. The surface must be level and firm to permit acceleration or deceleration of the tow vehicle. Grass will be cut to 6 inches or less.

**NOTE:** Approved waivers must be revalidated every 36 months. For initial waiver requests, HQ AETC/SGPT or a designated representative should inspect the training area.

**11. Winds:**

★**11.1. Wind Limits.** Parasail training will not be conducted in steady wind above 15 mph (12 knots) or gusty winds above 12 mph (10 knots). If wind conditions are approaching these maximums, take a wind reading with an anemometer or a handheld wind meter before each launch.

**11.2. Wind Direction.** Use a portable wind tee or sock in the launch area to determine the surface wind line.

**12. Student Training Requirement.** Each student will:

12.1. Complete DLT requirements before receiving a parasail tow down or release.

12.2. Demonstrate PLF proficiency on the 2- and 4-foot platforms on the day of the tow down or release. To maintain student PLF proficiency, the time between teaching DLTs and conducting parasail operations should be minimized.

12.3. Undergo approximately 10 minutes of instructor directed warm-up exercises prior to DLT training and parasailing.

★12.4. Complete one tow down and at least one release. The training goal is one tow up, tow down and two releases. The OIC or NCOIC may waive the second release and consider a student complete with only one release. Annotate the reason for the waiver of the second release on the student's AF Form 699; for example, adverse weather, improper or unsafe PLF, language problem, student safety, weather, injury, operational time constraints, etc. Students receiving no releases need to be excused per paragraph 6.

12.5. Complete PFT in the preflight phase. **NOTE:** AETC Syllabus P-V4A-A, *T-37 Joint Specialized Undergraduate Pilot Training*, requires completion of PFT in the preflight phase (Phase 1 of JSUPT and Euro-NATO Joint Jet Pilot Training [ENJJPT]). If weather prevents this from occurring, the Aerospace Physiology Training Flight commander will coordinate with the appropriate flying squadron to obtain a syllabus waiver and to schedule completion of PFT as early in Phase 2 as possible.

12.6. Have work and rest cycles that correspond to guidelines established in AETCI 48-101, *Prevention of Heat Stress Disorders*, with no less than one 15-minute rest after each 2-hour training period (this includes PFT crewmembers).

**13. Student Equipment.** A protective helmet, gloves, and boots without zippers are required for each student in parasail training. The canvas jungle boot is not authorized for PFT. Knee and/or elbow pads are recommended.

#### **14. Parasail Communication Requirements:**

14.1. Two-way radio communication must be maintained between the truck driver, crew chief, and LZS at all times. The student in the harness must be able to receive radio or megaphone transmissions from the LZS. If a radio is used to communicate with the student, the frequency must be free of extraneous transmissions from other agencies. Each student must be briefed on communications-out procedures in the event radio or megaphone failure occurs during his or her tow.

14.2. Notify the flight surgeon's office or acute care clinic before and after parasail, and ensure direct communication is available during parasail operations.

**15. Equipment.** Attachment 2 shows the minimum required and optional equipment to conduct PFT. Equivalent brands, models, etc., may be substituted.

★**16. Personal Equipment for PFT Instructors.** This equipment includes flight suits, flight jackets, flight boots, and gloves. Aerospace physiology units are authorized a special duty uniform for hot weather operations with local wing concurrence. The summer uniform will consist of a polo shirt, shorts, and a sun protective hat with rank for officers. Shirt, short, and hat color are determined locally. PFT crewmembers performing demonstrations, practice parasail jumps, or other parasail duties requiring more protection than the summer uniform provides will wear flight suit, gloves, and boots.

#### ***Section C--Equipment Modification and Application***

#### **17. Tow Vehicle (Land):**

17.1. The tow vehicle is a 1/2-ton pickup truck with a V-6 or V-8 engine, automatic transmission, and power steering. Heavy duty or steel-belted tires should be used. This vehicle will be replaced according to TO 36A-1-1301, *Vehicle Management Index Tile*.

17.2. This truck is a general purpose vehicle specifically equipped for PFT. Its use for other purposes is limited to essential logistic and administrative requirements of the aerospace physiology training flight or other purposes as approved by the chief of the aerospace physiology training flight.

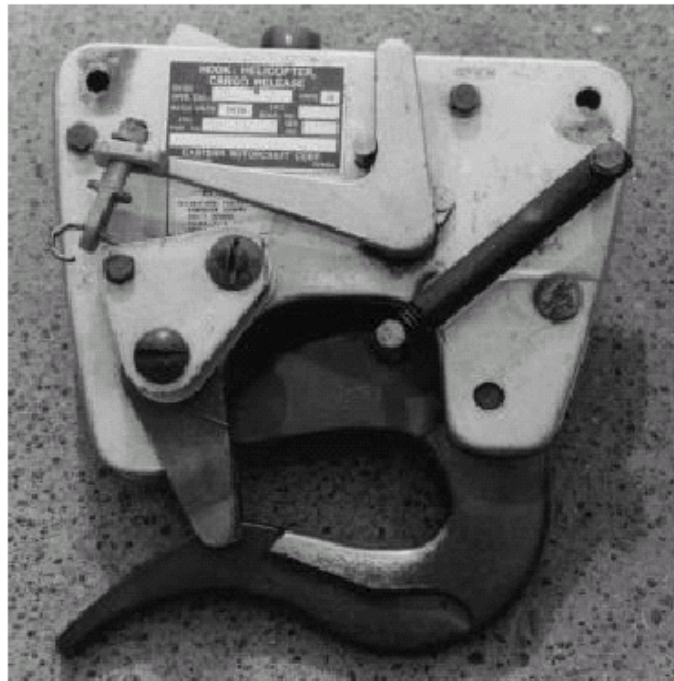
17.3. The vehicle will be modified as follows:

17.3.1. Bolt the tow assembly (Figure 1) to the truck bed to support a standard helicopter cargo hook (Figure 2). The tow assembly must be located as far forward in the truck bed as possible with the cargo hook along the vehicle's centerline. **NOTE:** The using activity must officially request authorization through base-level transportation before installing any additional equipment or minor modifications according to AFMAN 24-307, *Procedures for Vehicle Maintenance Management*.

**Figure 1. Tow and Reel Assembly.**



**Figure 2. Helicopter Cargo Hook.**



17.3.2. The toggle switch will electrically release the cargo hook or manually release by the hook lever.

17.3.3. Place the release operator and observer seats with seat belts behind and adjacent to the truck's attachment point for the towrope. Place these seats so the driver has an unobstructed view of both the parasail and the student. Install a roll bar to provide additional safety for the release operator.

17.3.4. Install a sliding rear window or communications port to enable the driver and release operator to communicate.

17.3.5. Mount one of the radios in the truck for communication between the crew chief at the launch point and the truck driver or release operator.

17.3.6. When not in use, fit the tow assembly with a vinyl-type cover for protection from weather.

## **18. Towrope:**

★18.1. A 1/2-inch tight-twisted or braided Dacron rope with a minimum of 3,500 pounds tensile strength is required.

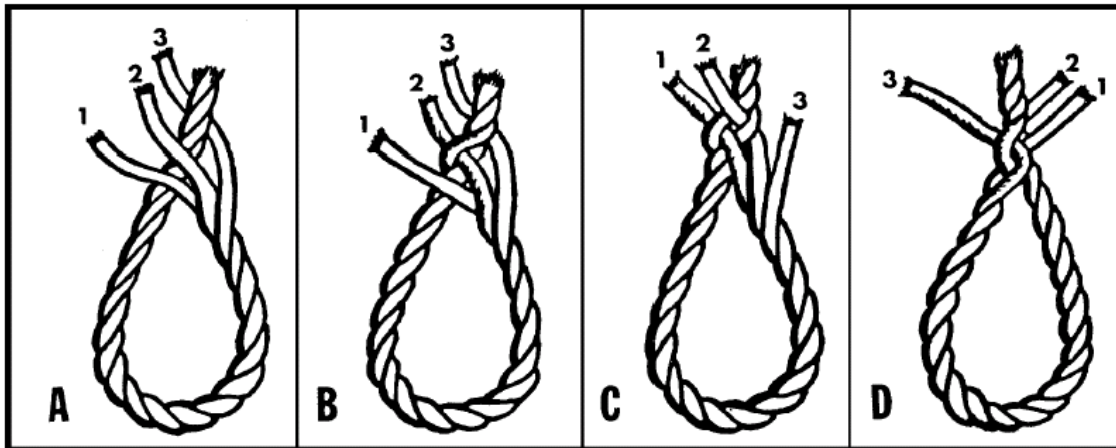
18.2. Cut the towrope to 300 feet for tow ups or tow downs (or 600 feet for releases) and form a 6- to 8-inch eye in each end. (**NOTE:** If desired, 600-foot rope lengths can be used for tow ups and tow downs.) Do not tape splices on rope, wrap strands with nylon cord, or melt end of strands. Number all ropes by attaching a stamped metal band or a piece of stenciled fabric near each end.

18.3. A portable take-up reel (see Figure 1) can be fabricated for rapid handling and storage of the towrope.

## **19. Towrope Splicing:**

**19.1. Towrope Loop (Eye) Construction (Figure 3).** The eye splice is used to make the looped ends of the parasail rope.



**Figure 3. Towrope Loop (Eye) Construction.**

19.1.1. Untwist the strands at the end of the rope for approximately 8 inches. Double the rope back to form a loop, with the unlaid ends pointing across the lay of the rope. Regard this as the front (step A).

19.1.2. Take the end of strand #2 and tuck it under one of the main strands. Arrange end strand #1 next to end strand #2 on the loop side across the rope. Place end strand #3 underneath the rope (step B).

19.1.3. Take end strand #1 under another main strand next to the first one, going in where end strand #2 comes out (step C).

19.1.4. Turn the splice over and place end strand #3 under a main strand where end strand #1 comes out. The #3 strand must go under the main strand against the twist of the rope, as seen in step D.

19.1.5. Ensure all three end strands come out level (at the same point) with each other and are equally tensioned. Each end strand will be pointing across a main strand in the rope. Lift the next main strand sufficiently to tuck an end strand under it. Do this at all three positions so that each end strand goes over and under one main strand. Repeat this procedure at least three times (total of four).

19.1.6. Go around the rope at about the same angle as the twist of the rope, but in the opposite direction of the twist. (A common error is to splice almost straight down the rope.) When the splice is complete, it can be rolled smooth between two boards or on the floor beneath the foot.

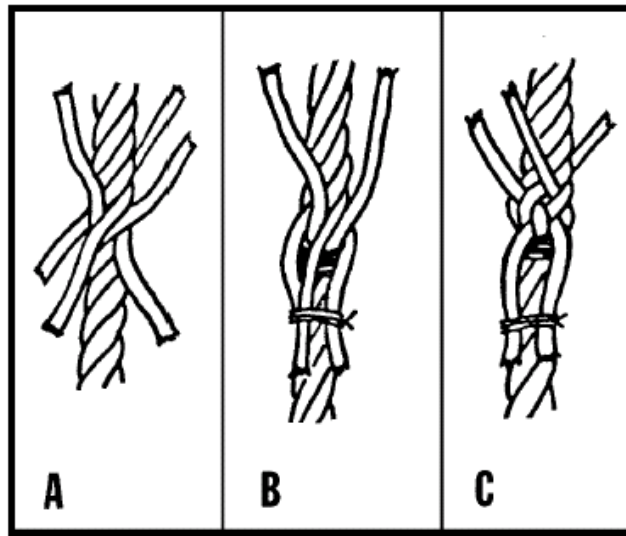
**19.2. Towrope Splice Joints (Figure 4).** A short splice is used for joining ropes after a break occurs or after cutting out damaged areas. If the splice is accomplished properly, it is stronger than the original rope.

19.2.1. To make a short splice untwist both ropes for approximately 8 inches and bring them together so each end comes into a strand space of the other rope (step A).

19.2.2. For the first splice, it is helpful to tie a string or use masking tape around the strands of one rope. In this way, half of the splices may be done without the opposite strands interfering (step B).

19.2.3. Take each of the free strand ends over and under a strand of the other rope, working against the twist (step C), as in the rope loop splice above. Make four complete tucks in this manner.

19.2.4. Remove the temporary string or tape from the other rope strands and make four complete tucks with these three strands. This total of four tucks on each splice should be sufficient to ensure a strong joint.

**Figure 4. Towrope Splice Joints.**

**20. Tow Yoke.** The tow yoke (see Figure 5), fabricated from 3,600-pound tensile strength webbing, connects the towrope to the parasail risers. The looped end of the towrope fastens to the loop at the apex of the yoke. The connectors at the ends of the yoke legs fasten to the rings located on the front risers of the parasail. Number each tow yoke independent of the towrope.

**Figure 5. Tow Yoke.**

**21. Harness.** The Pioneer® (manufacturer number 3.0694-1/mil P/N P-525) or New England® harness is recommended. PCU-4/P (modified J1) canopy releases will be installed. The Air Force BA22 harness may also be used as an alternate for this training. Pioneer® risers: manufacturer number 3.7832-1/mil. P/N P-526.

**22. Canopy.** Pioneer's ascending trainer (manufacturer number 1.137-1/mil P/N P-500-1) is the only authorized parasail canopy.

**Section D--Equipment Inspection, Maintenance, and Repair**

**23. Preuse Inspection.** The parachute or fabric shop will inspect new canopies, harnesses, towropes, and tow yokes. Record inspections on AETC Form 578, **Parachute Familiarization Training Equipment Record**, before the first use of these items.

23.1. Inspect new canopies in accordance with TO 14D1-2-411, *Trainer, Ascending*, paragraph 4-5.

23.2. Check suspension line length according to TO 14D1-2-411, paragraph 4-13. Return canopies with lines that vary in length more than 4 inches to the manufacturer.

23.3. In addition, the aerospace physiology unit will launch the canopy with a 150-pound weight to check for line stretch and canopy towing ability.

**24. Daily Inspection.** Within 24 hours prior to each training period, visually inspect the following items: canopies, harnesses, tow yokes, ropes, helmets, cargo release hook, and communications equipment. Log this inspection on AETC Form 578. After daily inspection, date and sign the inspector block. **NOTE:** The OIC, NCOIC, or designated representative will accomplish the daily and prelaunch inspections.

**25. Periodic Inspections.** The parachute or fabric shop will inspect the canopies using TO 14D1-2-411 at applicable intervals. Harnesses, towropes, and tow yokes will be inspected at 250-launch intervals. Record inspections on AETC Form 578. Towropes and yokes will be tensile strength tested to a minimum of 2,000 pounds. **NOTE:** Do not use ropes that have failed tensile strength tests, or require more than two splices. Ropes may be used for only 1 year from the date they were first used in PFT operations. Tester, seat belt, NSN 4920-612-9755, located in parachute shops, will be used to inspect towropes. Test all loops, yokes, and frayed areas, plus each 200 feet of the rope.

**26. Repairs:**

26.1. Repairs will comply with TO 14D1-2-411.

26.2. Only end tab stitches may be removed when replacing harness hardware. Only the parachute or fabric shop or the manufacturer may remove and replace stitching.

26.3. Unequal elongation of elastic nylon components is the usual cause of canopy tilt. Send canopies that develop this characteristic to the parachute or fabric shop, or the manufacturer for repair.

**Section E--Training Procedures**

**27. Method of Training.** This section contains detailed descriptions of the techniques and procedures used in the PFT program. Although these techniques apply to descent with normal personnel canopies, the method of training is based on the use of the ascending parasail trainer. The PFT program is a two-phase program consisting of DLT training followed by parasail training.

**28. Descent and Landing Techniques (DLT):**

28.1. Students will be taught PLFs according to TO 14D1-2-1, *Personal Parachutes*. Students practice front, side, and rear landings from the 2- and 4-foot PLF platforms until they are proficient. All students will demonstrate proficiency by conducting a minimum of one left side, one right side, one front left, one front right, and one rear left, one rear right for a total of 6 PLFs from the swing landing trainer or the lateral drift trainer. The instructor ensures the student begins from the correct prepare-to-land position and executes a proper PLF. The instructor evaluates each student for PLF proficiency.

28.2. Students displaying a lack of proficiency are referred to the OIC, NCOIC, or qualified PLF instructor, preferably a jump-qualified instructor.

28.3. Remedial training should consist of one-on-one instruction and practice to obtain necessary skills. Students needing remedial training will be afforded every opportunity to obtain PLF proficiency within scheduling limitations.

### **29. Parasail Training:**

29.1. Students must successfully complete descent and landing techniques according to paragraph 28 before receiving this phase of training.

29.2. The OIC, NCOIC, LZS, or crew chief will brief students on the following:

29.2.1. The need to continue running during the launch until they are well airborne. Students are not to pull up their legs when they think they are airborne.

29.2.2. Not to wear boots with zippers or canvas jungle boots. Not to wear or have pens, pencils, sunglasses, or any other object that may cause injury in flight suit pockets.

29.2.3. Not to make rapid successive turns (may induce oscillation), slip canopy, disconnect rope or yoke, or open the canopy release safety covers.

29.2.4. The location of the LZS. Instruct students to listen for the LZS's commands during descent.

29.2.5. The body position on landing: that is, hands over release covers, feet and knees together, knees slightly bent, toes pointed down, and eyes on the horizon.

29.2.6. The locally developed procedures to follow if the tow truck stops prematurely, the towrope breaks, or the LZS cannot communicate with the student.

29.2.7. The estimated altitude students may obtain. **NOTE:** Although the maximum possible altitude may vary, use one-half the length of the towrope for briefing purposes.

29.3. The OIC, NCOIC, or designated representative will confirm the student's present medical and physical status.

29.4. After the student briefing, before the first student tow down, and again before the first student release launch, one or more instructor launches will be made for demonstration and wind-testing (direction and velocity aloft).

29.5. Students will receive one tow down each before their individual release launch. The tow down develops student confidence in the equipment and training procedures. Specific techniques to accomplish correct tow downs vary due to wind conditions, weight of the student, and truck speed. However, ensure student attains sufficient altitude for the canopy to stabilize above him or her before the PLF. The tow vehicle will be driven directly into the wind for safety considerations. When performing the tow down, the truck driver, prior to ground contact by the student, will accomplish the following conditions:

29.5.1. Slack in the rope.

29.5.2. Groundspeed of not more than approximately 8 mph. **NOTE:** Driver should never let checking speedometer distract attention from watching the student.

29.5.3. Near vertical suspension under the canopy.

★29.6. Following the tow down, students will receive at least one release tow. The release develops student confidence in their ability to control the parachute during descent and accomplish an adequate PLF. After the tow up, the truck driver tows the student to the maximum attainable altitude over the landing zone. Upon receiving a prearranged signal from the landing zone supervisor, the truck driver stops the truck and the rope is released from the cargo hook. The landing zone supervisor directs the student to a safe landing area. The student will turn the parasail appropriately and accomplish a PLF.

29.7. If the student lands in winds strong enough to keep the canopy inflated and the landing zone supervisor cannot deflate the canopy, the student should be instructed to execute antidrag procedures. **NOTE:** Because of the attached towrope, operating only one release will not deflate the canopy. Therefore, it is possible to become airborne once again with only one riser attached to the harness.

29.8. The LZS critiques each student after each tow down or release.

### ***Section F--Crew Positions and Duties***

**30. PFT Team.** A PFT team consists of at least the following seven-team members: crew chief, two canopy assistants, driver, release operator, LZS, and landing zone assistant. If resources are available, a chase vehicle driver as well as a recorder may also be used to speed training.

**31. OIC or NCOIC.** The OIC or NCOIC:

31.1. Is responsible for the safe conduct of PFT.

31.2. Monitors crew and student performance at all times as well as environmental conditions affecting training and safety.

31.3. May perform as another crewmember during DLT or PFT.

**32. Release Operator.** The release operator is responsible for the safe operation of the release mechanism. Close coordination between the release operator and truck driver is essential during all phases of a tow.

**32.1. Prelaunch.** Before each tow, the release operator ensures the release hook is working properly. When proceeding to starting point, he or she visually inspects the rope from the tow truck for knots or tangles that can cause excessive localized loads or towrope failure. When attaching the rope to the hook, the release operator must make certain it is securely locked in

**32.2. During Launch.** The release operator checks the rope, monitors rope slack, and ensures the crew chief is holding on to the rope so the student is not jerked forward. During the tow up and while the student is still running, the release operator focuses attention on the canopy and student. If the student falls during launch, the release operator must release the rope from the hook to prevent dragging the student. The release operator will direct the truck driver to stop the truck if the canopy rolls more than 45 degrees during the launch and the student has not left the ground.

**32.3. Tow Downs.** The release operator and truck driver control the descent by coordinated signals (either oral or hand) between each other. The release operator releases the rope only after the canopy has been collapsed.

**32.4. Releases.** The release operator and truck driver will end the tow following a prearranged signal from the landing zone supervisor that the student is over the landing area. The release operator releases the rope from the cargo hook after the truck comes to a complete stop.

**33. Tow Truck Driver.** The tow truck driver is responsible for the safe operation of the truck. He or she must be knowledgeable of the characteristics and limitations of the parasail. The truck driver controls the speed and direction of the parasail by watching the canopy and keeping the red panels at the bottom. He or she drives over the selected training site to determine the condition of the field and direction of the run. There must be coordination between the truck driver and the release operator during the run. The truck driver must have a minimum of 10 releases as a parasail jumper, and drive a minimum of 25 tow downs and 15 releases in an apprentice status before certified status is granted. The truck driver must meet the requirements of paragraph 9.3, and have a minimum of 15 releases as a parasail jumper before qualified status is granted. If a tow vehicle driver (either certified or qualified) goes for more than 6 months without a student or instructor tow, he or she will be considered noncurrent and will require at least two tow downs and one release during crew training before towing students.

**33.1. Prelaunch.** The truck driver proceeds to the starting point for the launch and positions the truck facing the landing zone so the truck driver or release operator can attach the rope to the hook.

**33.2. During Launch.** The truck driver takes up the slack in the rope when the crew chief and release operator give the signal. The truck driver starts the launch on a signal from the crew chief while watching the canopy. If the canopy drifts laterally, the driver holds acceleration to a minimum until the canopy straightens out. Once optimum speed is attained, the driver must ensure the student does not descend back to the ground. As the canopy climbs, the driver must not tow the canopy off the wind line and must be on guard against over towing it. The sign of over towing is the tendency for the canopy to roll off center or the front edge of the canopy to tuck under.

**33.3. Tow Down.** The truck driver watches the descent and judges truck movement to position the student for landing (paragraph 29.5). Just prior to student and ground impact, the driver brings the truck to a full stop.

**33.4. Releases.** The truck driver maintains speed and course so the student reaches maximum altitude and can be released over landing zone. Normally, a signal from the LZS directs the truck driver and release operator. The truck driver also accomplishes the duties of the chase vehicle when a chase vehicle is not used.

**34. Chase Vehicle Driver (Optional).** The chase vehicle driver picks up the students and the towrope in the landing zone and returns them to the launch area after each tow. The chase vehicle driver must be aware of the wind line and return the towrope to the launch area as close to the wind line as possible. Care must be taken by the chase vehicle driver not to entangle the landing zone crew while the rope is being realigned. The chase vehicle should have a radio for communication with the truck driver and crew chief. The chase vehicle driver is not required to have the minimum 25 experiences in an apprentice status before being used for student training. However, some previous training in an apprentice status is recommended to ensure familiarity with PFT procedures.

**35. Crew Chief and Canopy Assistants.** The crew chief and canopy assistants set up the launch area and control student training flow. They are responsible for safe operation in the launch area.

**35.1. Prelaunch:**

35.1.1. The crew chief and canopy assistants lay out the canopy, straighten the suspension lines, and ensure there is no canopy inversion. They perform the prelaunch inspection.

35.1.2. The canopy assistants hold the canopy and/or suspension lines while the canopy is inflated, and the crew chief ensures suspension lines are not entangled.

35.1.3. One of the canopy assistants or the crew chief will fit the student in the harness and attach the yoke to rings on the front risers. The crew chief then double checks, ensuring all connections are firmly closed, the harness is properly fitted, and the prelaunch inspection was accomplished. He or she reminds the student of takeoff procedures.

**35.2. During Launch.** The crew chief will stand in front of the student and prepare to take up slack in the rope. When the slack in the rope is taken up, the canopy assistants and crew chief prepare for the truck and student to move forward. The crew chief gives the signal to inflate the canopy. Once the canopy is inflated and off the ground, he or she makes a final check to ensure suspension lines are straight and untangled and the canopy is free of damage or defects. The crew chief gives the launch signal after the canopy is inflated and on the wind line. The signal to the truck driver may vary depending on wind conditions. Examples are "move out slowly," "hit it," "slow run-up," and "launch." Confusing commands such as "go" and "no" should not be used. The canopy assistants should coordinate release of canopy in order to maintain a proper launch without canopy roll.

**35.3. After Launch.** The crew chief and canopy assistants stay alert until the student is well airborne and under the control of the truck driver or release operator. The crew chief will be prepared to give a prearranged signal (for example, "abort" or "tow-down") to the truck driver or release operator if any hazard is noted.

**36. Landing Zone Supervisor (LZS).** The LZS may be any officer, superintendent or NCOIC of aerospace physiology, any jump-qualified individual, or any individual with a five-skill level who has qualified in the LZS position as described in paragraph 9. The LZS is responsible for all communications with the student once the student is undertow. The LZS informs the release operator and driver when to start tow down or release and ensures the student has the proper body position for the PLF. The LZS makes or observes the demonstration release to determine the approximate landing site and general wind conditions.

**36.1. Prelaunch.** The LZS ensures the landing zone is free of obstructions and safe for student launch. He or she confirms radio or megaphone communication with the student prior to each launch.

**36.2. During Tow.** The LZS signals the truck driver when student should be towed down or released, as appropriate.

**36.3. Tow Down.** The LZS coaches the student into the proper prepare-to-land position (that is, hands over the release covers, eyes on the horizon, feet and knees together, and toes pointed slightly downward). The LZS helps deflate the canopy, when required, and prepares the equipment and student for return to the launch area. He or she critiques individual student performance after each landing.

**36.4. Releases.** The LZS directs the student to the landing zone with appropriate turns. He or she should avoid having the student make hard turns within approximately 50 feet of the ground. After the student completes the final turn, the landing zone supervisor again coaches the student into the proper prepare-to-land position. He or she helps deflate the canopy, if required, and prepares the equipment and student for return to the launch area. The landing zone supervisor critiques individual student performance after each landing.

**37. Landing Zone Assistant.** The landing zone assistant helps the LZS as needed, deflates the canopy when required, and prepares the parasail equipment for return to the launch area. He or she does not require the minimum 25 launches in an apprentice status before accomplishing student training. However, some previous training in an apprentice status (without students) is recommended to ensure familiarity with procedures.

**38. Recorder.** The recorder ensures all necessary information is recorded on AETC Form 768, **Parachute Familiarization Training Record**, for each tow. He or she also may assist the launch area crew with student management and prelaunch equipment inspections. This person does not require the minimum 25 launches in an apprentice status before accomplishing student training. However, some previous training in an apprentice status is recommended to ensure familiarity with PFT procedures.

### ***Section G--Use of Forms (Records and Reports)***

**39. General Instructions.** Forms in this section may either be typed or handwritten, as long as they are neat and legible.

**40. Use of AETC Form 578, Parachute Familiarization Training Equipment Records.** The training unit maintains AETC Form 578 (see Figure 6) on PFT support equipment (for example, canopies, ropes, yokes, harnesses, radios, megaphones, and student monitors). Prepare AETC Form 578 as follows:







**41.4. Block 5.** Self-explanatory.

**41.5. Blocks 6 through 10.** Extract from AF Form 699.

**41.6. Block 11.** If the injured person is a foreign national, indicate his or her country in this block. Elaborate on communication problems in narrative block 29.

**41.7. Block 12.** Self-explanatory.

**41.8. Block 13.** Include sport jumps, military jumps, or other similar events.

**41.9. Block 14.** Self-explanatory.

**41.10. Block 15.** Include sport parachuting, training at any military courses, or other experience.

**41.11. Block 16.** State all injuries (football, basketball, soccer, etc.) that could have contributed to the injury.

**41.12. Block 17.** Describe student proficiency (or lack of) on previous PLFs.

**41.13. Block 18.** Self-explanatory.

**41.14. Block 19.** Consider significant factors contributing to the injury (field surface conditions, objects at perimeter of field, etc.).

**41.15. Block 20.** Check all applicable conditions.

**41.16. Block 21.** Ambient temperature at time of injury.

**41.17. Block 22.** Constant wind direction relative to magnetic north or average wind direction. If fluctuating, state the range of fluctuations, if significant.

**41.18. Block 23.** Constant wind velocity (in mph) from a handheld anemometer or wind meter at time of injury.

**41.19. Block 24.** If wind gusts exist, the maximum gust velocity (in mph) before or at time of injury.

**41.20. Block 25.** Number of gusts per minute or within a specified period of time.

**41.21. Block 26.** Total number of launches performed by the PFT crew on that day (before the injury). Include tow downs, releases, and crew demonstrations.

**41.22. Block 27.** Types of communications equipment used; for example, radios, megaphones, transceivers, monitors, etc.

**41.23. Block 28.** Nature of the injury, estimated duty not involving flying period or loss of time (if any), and impact on continuation of undergraduate pilot training or undergraduate navigator training. Include the signature block of the attending physician or flight surgeon.

**41.24. Block 29.** The OIC or NCOIC supervising the actual PFT will complete this section and include equipment data, student performance factors, function of PFT crew, wind direction relative to launch and landing (for example, tailwind, quartering, crossing, or headwind), and other information relative to the injury.

**41.25. Blocks 30 and 31.** Self-explanatory.

**NOTE:** The emergency status and precedence category for AETC Form 601 is C- (continue under emergency conditions). This report is essential to the initiating agency during emergency conditions with the following precedence: C-2, normal, necessary for planning or implementing short-range programs. Reports are to be prepared and submitted after those assigned C-1. MINIMIZE is not applicable.

**42. Use of AETC Form 717, Parachute Familiarization Training Instructors Record.** The aerospace physiology unit maintains AETC Form 717 (Figure 8) for personnel qualified as PFT crewmembers by making a single line entry for each date PFT is conducted. File this record in the unit until reassignment. Then give it to the individual to maintain as historical data for the next instructor assignment. Prepare the AETC Form 717 as follows:

**Figure 8. Sample AETC Form 717, Parachute Familiarization Training Instructor's Record.**

Drazil, Jeffrey D.			E-5	0361	Randolph AFB, TX		1	
NAME (Last, First, Middle Initial)			GRADE	EXPOSURE NO.	BASE		CARD NO.	
DAILY TOTALS/CUMULATIVE TOTALS								
DATE	OIC/NCOIC	CREW CHIEF	CANOPY	DRIVER	RELEASE OPERATOR	LANDING ZONE SUPVR	TOWDOWN	RELEASE
1 Apr 94		25 25 (C)						
2 Apr 94		15 40 (C)						
3 Apr 94		61 101 (Q)						
4 Apr 94							1	1
5 Apr 94			70 70 (C)					
6 Apr 94			40 110 (Q)					
7 Apr 94		35 Q						
8 Apr 94			39 Q				2	6
3 Jun 97		27 27 (RQ)						
4 Jun 97		15 Q						

AETC FORM 717, JUL 93

PARACHUTE FAMILIARIZATION TRAINING INSTRUCTOR'S RECORD

**42.1. Name.** PFT instructor's name.

**42.2. Grade.** Military grade; for example, O-3 or E-5.

**42.3. Exposure No.** PFT instructor's chamber crew exposure number.

**42.4. Base.** Name of PFT base.

**42.5. Card No.** Number in succession.

**42.6. Date.** Date training is accomplished.

**42.7. Daily Totals and Cumulative Totals.** Enter the number of daily totals and cumulative totals each instructor performed the PFT crewmember duties indicated. Enter these numbers in the appropriate crew position columns for the last and next date the duties were performed with a line in between. See paragraph 9.2 for the use of "Cert" or "C," paragraph 9.3 for the use of "Qual" or "Q," and paragraph 9.4 for the use of "RQ" (requalified).

**43. Use of AETC Form 768, Parachute Familiarization Training Record.** The training unit records student training on AETC Form 768 (Figure 9). Prepare AETC Form 768 as follows:

Figure 9. Sample AETC Form 768, Parachute Familiarization Training Record.

BASE Randolph AFB TX			PARACHUTE FAMILIARIZATION TRAINING RECORD										DATE 20020410		PAGE NUMBER 01		YOKE	ROPE	HARNES	CANOPY		
STUDENT		GRADE	TYPE TOW		TOW NUMBER		INSTRUCTORS								REMARKS							
NAME/CLASS/ORGANIZATION			TD	R1	R2	DAILY	TOTAL	OIC/NCOIC	C CHIEF	CANOPY	DRIVER	RL OPER	LD SUPV									
LATIMER, J.C.	APTU	E-5	X			1	1144	0444	1555	0329/4013	1500	0382	1591		2	7	5	5				
LATIMER, J.C.	APTU	E-5		X		1	1	1	1591	1798/4024	1	1	0361		2	7	5	5				
WILSON, C.D.	95-11/562ND	O-1	X						1555	0329/4013			1591		3	8	6	2				
WILSON, C.D.	1	1							1591	1798/4024			0361		3	8	6	2				
RUNELS, J.D.			X						1555	0329/4013			1591		2	7	33	66				
RUNELS, J.D.		O-1		X					1591	1798/4024			0361		2	7	33	66				
LORENZI, E.B.		O-2	X						1555	0329/4013			1591		3	8	8	8				
LORENZI, E.B.		O-2							1591	1798/4024			0361		3	8	8	8				
BYERS, J.E.		O-1	X						1555	0329/4013			1591		2	7	5	5				
BYERS, J.E.		1							1591	1798/4024			0361		2	7	5	5				
SMITH, J.J.			X						1555	0329/4013			1591		3	8	6	2				
SMITH, J.J.				X					1591	1798/4024			0361		3	8	6	2				
JONES, E.F.			X						1555	0329/4013			1591		2	7	33	66				
JONES, E.F.				X					1591	1798/4024			0361		2	7	33	66				
WILSON, C.D.		1			X				1555	0329/4013			1		3	8	8	8				
RUNELS, J.D.		O-1		X					1	1					2	7	5	5				
LORENZI, E.B.		O-2		X											3	8	6	2				
BYERS, J.K.		O-1		X											2	7	33	66				
SMITH, J.J.	1	1		X											3	8	8	8				
JONES, E.F.	95-11/562ND	O-1	X			20	1163	0444	1555	0329/4013	1500	0382	0361		2	7	5	5				
*****		****				*****	*****	*****	*****	*****	*****	*****	*****	*****	TRAINING COMPLETED*****				***	***	***	***
CHASE DR								LZ ASST				RECORDER										
BURRIESCE (0004)								DUNTEMAN (2299)				CUERVAS (8091)										

AETC FORM 768, JUL 93 (EF-V2)

PREVIOUS EDITION IS OBSOLETE.

43.1. **Base.** Name of PFT base.43.2. **Date.** Date training is accomplished.43.3. **Page Number.** Numbered in succession for calendar year.43.4. **Name/Class/Organization.** Last name, initials, and class or organization.43.5. **Grade.** Military grade; for example, O-3 or E-5.43.6. **Type Tow:**43.6.1. **TD.** Mark with X if this was a tow down for the trainee.43.6.2. **R1.** Mark with X if this was the first release for the trainee.43.6.3. **R2.** Mark with X if this was the second release for the trainee.43.7. **Daily.** Enter the tow number for the day.

43.8. **Total.** Enter the total tows to date from the beginning of PFT at your base. **NOTE:** Each PFT qualified instructor is identified by his or her hypobaric chamber crew exposure number. This number is entered into the appropriate crew position blocks the first and last time he or she performed the duties in succession, and it will be connected with a vertical line. A vertical line will also be used for the daily and total tow number columns (Figure 7).

- 43.9. OIC/NCOIC.** Crewmember's chamber crew exposure number.
- 43.10. Crew Chief.** Crewmember's chamber crew exposure number.
- 43.11. Canopy.** Crewmember's chamber crew exposure number.
- 43.12. Driver.** Crewmember's chamber crew exposure number.
- 43.13. Release Operator.** Crewmember's chamber crew exposure number.
- 43.14. Landing Zone Supervisor.** Crewmember's chamber crew exposure number.
- 43.15. Remarks.** Enter specific remarks regarding equipment malfunction or student injury. This section is helpful for extracting data for maintenance and recording it on the PFT equipment record.
- 43.16. Yoke.** Indicate the yoke number used.
- 43.17. Rope.** Indicate the rope number used.
- 43.18. Harness.** Indicate the harness number used.
- 43.19. Canopy.** Indicate the canopy number used.
- 43.20. Chase Driver.** Crewmember's name and crew exposure number.
- 43.21. Landing Zone Assistant.** Crewmember's name and crew exposure number.
- 43.22. Recorder.** Crewmember's name and crew exposure number.
- 44. Use of AF Form 699, Physiological Training Record and AF Form 702, Individual Physiological Training Record.** The training unit records PFT on these forms.
- 45. Use of AETC Form 435, Mishap Data Worksheet.** On reportable mishaps, the training unit furnishes wing ground safety with the necessary information required to submit AETC Form 435 on a student involved in an Air Force mishap or incident according to AFI 91-204, *Safety Investigations and Reports*.
- 46. Forms Prescribed.** AETC Forms 578, 601, 717, and 768.
- 47. Forms Adopted.** AF Form 699, AF Form 702, AF Form 4293, and AETC Form 435.

★JAMES J. DOUGHERTY, Col, USAF, MC, CFS  
Command Surgeon

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 36-22, *Military Training*

AFI 11-403/AETC Sup 1, *Aerospace Physiological Training Program*

AFI 91-204, *Safety Investigations and Reports*

AFMAN 24-307, *Procedures for Vehicle Maintenance Management*

AFMAN 37-139, *Records Disposition Schedule* (will become AFMAN 33-322, Volume 4)

AETCI 48-101, *Prevention of Heat Stress Disorders*

AETC Syllabus P-V4A-A, *T-37 Joint Specialized Undergraduate Pilot Training*

AETC Instructor Guide, P-V4A-A-JL-IG

TO 14D1-2-1, *Personal Parachutes*

TO 14D1-2-411, *Trainer, Ascending*

TO 36A-1-1301, *Vehicle Management Index Tile*

***Abbreviations and Acronyms***

**DLT**—descent and landing techniques

**ENJJPT**—Euro-NATO Joint Jet Pilot Training

**JSUNT**—joint specialized undergraduate navigator training

**JSUPT**—joint specialized undergraduate pilot training

**LZS**—landing zone supervisor

**NCOIC**—noncommissioned officer in charge

**OIC**—commissioned officer in charge

**PFT**—parachute familiarization training

**PLF**—parachute landing fall

**Attachment 2****MINIMUM REQUIRED EQUIPMENT AND OPTIONAL EQUIPMENT**

<b>Minimum Required</b>	<b>Number of Items Required</b>
Pickup Truck (1/2-ton)	1
Hook, helicopter, cargo release (NSN 1680-00-941-6541, P/N K-786006-1; NSN 4030-00-021-5014, P/N SP-4297-2)	2
Structural A-frame	1
Take-up reel	1
Public address set (megaphone, electric, battery-powered) (NSN 5830-00-043-2413)	2
Anemometer, model BTC (cup) (NSN 6660-00-551-3192)	2
Wind meter, handheld (NSN 6680-00-833-7010)	3
Radios, handheld	5
PFT towrope, Dacron, ½-inch diameter	3
PFT riser (pair)	6
Parasail harness	6
Parasail parachute (NSN 1670-00-793-9854LS, P/N P-500-1)	6
Protective helmet (various sizes)	24
Parasail familiarization training yoke	3
Pickup truck (1/2-ton) or panel van for chase vehicle	1
<b>Optional</b>	<b>Number of Items Required</b>
Knee or elbow pads	15 pair
Student monitors (P/N H03UMC1122-C)	5

## ★Attachment 3

## IC 2003-1

**INTERIM CHANGE (IC) 2003-1 TO AETCI 36-2224, *PROCEDURES FOR PARACHUTE FAMILIARIZATION TRAINING (PFT)*****7 AUGUST 2003**

Approving Authority:

JAMES J. DOUGHERTY, Col, USAF, MC, CFS

Command Surgeon

***SUMMARY OF REVISIONS***

This revision incorporates interim change (IC) 2003-1, which further defines excusals from parasail and parasail ground training (paragraphs 6.1 and 6.2); allows the use of the lateral drift trainer in lieu of the swing landing trainer, when available (paragraph 7.1); redefines wind limits (paragraph 11.1); clarifies the intent to have the student complete two parasail releases or document the reason for not completing a second release (paragraph 12.4); defines alternate summer uniform for parasail operations (paragraph 16); and expands the definition of acceptable tow ropes (paragraph 18.1). A ★ indicates revision from the previous edition. See the last attachment of this publication (IC 2003-1) for the complete IC.

6.1. The chief of the aerospace physiology training flight may excuse a student from parasail if the student has a language problem or other factors that could jeopardize his or her safety. The student must, however, complete the training listed in paragraph 7.

6.2. Graduates of US military parachute courses (or another country from which the Air Force accepts physiological training) and students who previously completed parasail in another undergraduate flying training program may be excused from parasail but must complete the training listed in paragraph 7.

7.1. PLFs from the 2- and 4-foot platforms, swing landing trainer (or lateral drift trainer), and suspended harness.

**11.1. Wind Limits.** Parasail training will not be conducted in steady wind above 15 mph (12 knots) or gusty winds above 12 mph (10 knots). If wind conditions are approaching these maximums, take a wind reading with an anemometer or a handheld wind meter before each launch.

12.4. Complete one tow down and at least one release. The training goal is one tow up, tow down and two releases. The OIC or NCOIC may waive the second release and consider a student complete with only one release. Annotate the reason for the waiver of the second release on the student's AF Form 699; for example, adverse weather, improper or unsafe PLF, language problem, student safety, weather, injury, operational time constraints, etc. Students receiving no releases need to be excused per paragraph 6.

**16. Personal Equipment for PFT Instructors.** This equipment includes flight suits, flight jackets, flight boots, and gloves. Aerospace physiology units are authorized a special duty uniform for hot weather operations with local wing concurrence. The summer uniform will consist of a polo shirt, shorts, and a sun protective hat with rank for officers. Shirt, short, and hat color are determined locally. PFT crewmembers performing demonstrations, practice parasail jumps, or other parasail duties requiring more protection than the summer uniform provides will wear flight suit, gloves, and boots.

18.1. A 1/2-inch tight-twisted or braided Dacron rope with a minimum of 3,500 pounds tensile strength is required.



29.6. Following the tow down, students will receive at least one release tow. The release develops student confidence in their ability to control the parachute during descent and accomplish an adequate PLF. After the tow up, the truck driver tows the student to the maximum attainable altitude over the landing zone. Upon receiving a prearranged signal from the landing zone supervisor, the truck driver stops the truck and the rope is released from the cargo hook. The landing zone supervisor directs the student to a safe landing area. The student will turn the parasail appropriately and accomplish a PLF.